Meeting Agenda (last revised April. 27, 2008, noon)
GARM III Biological Reference Points Meeting: April 28-May 2, 2008

Date /Day	Start	End	Duration (min)	Topic	Presenter	Rapporteur
28-Apr	9:00	9:10	10	Introduction	Weinberg	
1	9:10	9:30	20	Overview of GARM/ meeting objectives	GARM Chair	
				TOR #4 Biological Reference Points: a.Current values and proxies		
1	9:30	9:45	15	**WP 4.1** Overview of current BRPs methods and estimates	Rago	Brooks
1	9:45	10:00	15	Discussion		
1	10:00	10:30	30	**WP 4.2** Setting SSBmsy via Stochastic Simulation Ensures Consistency with Rebuilding Projections. Chris Legault	Legault	Brooks
1	10:30	10:45	15	Break		
1	10:45	11:00	15	Discussion		
				TOR #2: Trends in Stock Productivity		
1	11:00	11:45	45	**WP 2.1** Trends in Average length, weight and maturity at age for relevant stocks and trends in environmental variables.	*O'Brien*	Blaylock
1	11:45	12:00	15	Discussion		
1	12:00	12:15	15	**WP 2.2** Implications of biological trends for estimation of biological reference points and rebuilding schedules.	*Rago et al*	Blaylock
1	12:15	12:30	15	Discussion		
1	12:30	13:30	60	Lunch		

Date /Day	Start	End	Duration (min)	Topic	Presenter	
				TOR #3 Ecosystem Approaches to Gulf of Maine/Georges Bank Fisheries		
1	13:30	13:50	20	**WP 3.1** US Northeast Shelf LME Biomass, target biological reference points for fish and worldwide cross-system comparisons. Overholtz, Link, Fogarty, Col, Legault.	Overholtz	Chute
1	13:50	14:00	10	Discussion		
1	14:00	14:20	20	**WP 3.2** Energy Budget contextualization of fish biomasses at B_MSY	Link	Chute
1	14:20	14:30	10	Discussion		
1	14:30	14:50	20	**WP 3.3** Estimates of aggregate surplus production for the GARM and other stock groups for the US Northeast Shelf LME. Overholtz, Fogarty, Link, Legault, Col.	Overholtz	Chute
1	14:50	15:00	10	Discussion		
1	15:00	15:15	15	Break		
1	15:15	15:35	20	**WP 3.4** An Aggregate and MS Production Model: A Simulator Tool	Link	Jacobson
1	15:35	15:45	10	Discussion		
1	15:45	16:10	25	**WP 3.5** Fishery Production Potential	Fogarty	Jacobson
1	16:10	17:00	50	Discussion—WP 3.6 Synthesis: Implications for single species reference points	Link/Fogarty	Jacobson
				TOR #4 Biological Reference Points:		
1	17:00	17:15	15	**WP 4.3**. Sensitivity of the Long-term Observation-error Survey Series (LOSS) model to variable stock-recruit steepness and stock depletion inputs: A test case using Gulf of Maine haddock (Palmer and Legault).	Palmer/Legault	Shepherd
1	17:15	17:25	10	Discussion		
1	17:25	17:40	15	**WP 4.7** (Supplementary WP) Size-specific tag recovery rates of cod and implications for estimation of fishing mortality in analytical models. Miller and Hart	Miller/Hart	Shepherd
1	17:40	17:50	10	Discussion		
1	17:50	18:00	10	Summary/Followup (Chair)		

Date /Day	Start	End	Duration (min)	Topic	Presenter	Rapporteur
29-Apr	*9:00*	9:15	15	Progress review and Order of the Day (Chair)	Chair	
				TOR #1 Influence of retrospective patterns on parameter estimates and specification of initial conditions for forecasting.		
2	9:15	9:35	20	**WP 1.1** Specifying Initial Conditions for Forecasting When Retrospective Pattern is Present.	Legault/ Terceiro	Miller
2	9:35	9:50	15	Discussion		
2	9:50	10:10	20	**WP 1.2** A simulation study to evaluate estimation of biological reference points from VPA and ASAP.	Brooks/ Legault/ Seaver	Miller
2	10:10	10:25	15	Discussion		
2	10:25	10:40	15	Break		
				TOR #4 Biological Reference Points: b. Update by stock		
2	10:40	11:25	45	**WP 4.A** Georges Bank Cod	O'Brien	Wigley
2	11:25	11:55	30	Discussion		
2	11:55	12:55	60	Lunch		
2	12:55	13:40	45	**WP 4.F** Gulf of Maine Cod	Mayo	Wigley
2	13:40	14:05	25	Discussion		
2	14:05	14:30	25	**WP 4.F.1** Gulf of Maine Cod	Butterworth	Wigley
	14:30	14:40	10	Discussion		
2	14:40	15:30	50	**WP4.B** Georges Bank Haddock	Brooks	Mayo
2	15:30	15:55	25	Discussion		
2	15:55	16:10	15	Break		
2	16:10	17:05	55	**WPs 4.C** Georges Bank + **4.D** Southern New England + **4.E** Cape Cod-Gulf of Maine Yellowtail Flounder	Legault	Hendrickson
2	17:05	17:50	45	Discussion		
2	17:50	18:00	10	Summary/Followup	Chair	
Date /Day	Start	End	Duration (min)	Topic	Presenter	Rapporteur
30-Apr	*9:00*	9:15	15	Progress review and Order of the Day (Chair)	Chair	
3	9:15	10:00	45	**WP 4.N** Gulf of Maine/ Georges Bank Acadian Redfish	Miller	Brooks
3	10:00	10:15	15	Discussion		
3	10:15	11:00	45	**WP 4.K** Georges Bank Winter Flounder	Hendrickson	Sosebee
3	11:00	11:15	15	Break		
3	11:15	11:30	15	Discussion		
3	11:30	12:30	60	**WP 4.I** Gulf of Maine Winter Flounder	Nitschke	Sosebee
3	12:30	12:45	15	Discussion		
3	12:45	13:45	60	Lunch		
3	13:45	14:30	45	**WP 4.J** Southern New England Winter flounder	Terceiro	Alade
3	14:30	14:45	15	Discussion		
3	14:45	15:30	45	**WP 4.G** Witch Flounder	Wigley	Col
3	15:30	15:45	15	Discussion		
3	15:45	16:00	15	Break		
3	16:00	16:45	45	**WP 4.H** Gulf of Maine/Georges Bank American Plaice	O'Brien	Richards
3	16:45	17:00	15	Discussion		
3	17:00	17:30	30	**WP 4.M** Georges Bank/Gulf of Maine Pollock	Mayo	Richards
3	17:30	17:45	15	Discussion		
3	17:45	18:00	15	Summary/Followup	Chair	
	19:30	22:30		Social/Dinner --British Beer Company, Falmouth Heights		

Date /Day	Start	End	Duration (min)	Topic	Presenter	Rapporteur
1-May	9:00	9:15	15	Progress review and Order of the Day	Chair	
4	9:15	10:05	50	**WP 4.L** White Hake	Sosebee	Palmer
4	10:05	10:20	15	Discussion		
4	10:20	10:35	15	Break		
	10:35	10:55	20	**WP.4.L.1** White Hake alt	Butterworth	Palmer
	10:55	11:05	10	Discussion		
4	11:05	12:00	55	**WP 4.R** Gulf of Maine Haddock	Palmer	Mayo
4	12:00	12:15	15	Discussion		
4	12:15	13:15	60	Lunch		
4	13:15	13:35	20	**WP 4.O** Ocean Pout	Wigley	Col
4	13:35	13:45	10	Discussion		
4	13:45	14:05	20	**WP 4.P** Gulf of Maine/Georges Bank Windowpane Flounder	Hendrickson	Chute
4	14:05	14:15	10	Discussion		
4	14:15	14:35	20	**WP 4.Q** Southern New England – Mid-Atlantic Windowpane	Hendrickson	Chute
4	14:35	14:45	10	Discussion		
4	14:45	15:05	20	**WP 4.S** Atlantic Halibut	Col	Alade
4	15:05	15:15	10	Discussion		
4	15:15	15:30	15	Break		
4	15:30	17:50	140	Review/Revisions/Follow-up	TBD	
4	17:50	18:00	10	Summary/Followup (Chair)	Chair	
2-May	9:00	9:30	30	Progress review and Order of the Day	Chair	
5	9:30	10:30	60	Review of Outstanding Issues as necessary	TBD	
5	10:30	10:45	15	Break		
5	10:45	12:00	75	Report Development [CLOSED]		
5	12:00	13:00	60	Lunch		
5	13:00	16:00	180	Report Development, Summary and Assignments [CLOSED]		
5	16:00	16:00	0	Adjourn		

List of Working Papers

WP 1.1 Specifying Initial Conditions for Forecasting When Retrospective Pattern is Present. Chris Legault and Mark Terceiro

WP 1.2 A simulation study to evaluate estimation of biological reference points from VPA and ASAP. Liz Brooks, Chris Legault, and Al Seaver

WP 2.1 Trends in Average length, weight and maturity at age for relevant stocks. O'Brien

WP 2.2 Implications of biological trends for estimation of biological reference points and rebuilding schedules. Rago et al.

WP 3.1 Overholtz, Link, Fogarty, Col, Legault. US Northeast Shelf LME Biomass, target biological reference points for fish and worldwide cross-system comparisons.

WP 3.2 Energy budget contextualization of fish biomasses at B_MSY *J.S. Link, W.J. Overholtz, C. Legault, L. Col, M.J. Fogarty

WP 3.3 Overholtz, Fogarty, Link, Legault, Col. Estimates of aggregate surplus production for the GARM and other stock groups for the US Northeast Shelf LME.

WP 3.4 An Aggregate and MS Production Model: A Simulator Tool J.S. Link, *R. Gamble, W.J. Overholtz, C. Legault, L. Col, M.J. Fogarty

WP 3.5 M.J. Fogarty, W.J. Overholtz, and J. Link. Fishery Production Potential of the Northeast Continental Shelf of the United States.

WP 3.6 Synthesis of ecosystem considerations. Link et al.

WP 4.1 Overview of current BRPs methods and estimates. Rago et al.

WP 4.2 Setting SSBmsy via Stochastic Simulation Ensures Consistency with Rebuilding Projections. Chris Legault

WP 4.3 Sensitivity of the Long-term Observation-error Survey Series (LOSS) model to variable stock-recruit steepness and stock depletion inputs: A test case using Gulf of Maine haddock (Palmer and Legault).

WP 4.4 (Supplementary Paper): A method to apportion landings with unknown area, month and unspecified market categories among landings with similar region and fleet characteristics (Palmer).

WP 4.5 (Supplementary Paper): A description of discard estimation methods where observer coverage is unavailable (Palmer, Wigley, O'Brien, Mayo, Rago).

WP 4.6 (Supplementary Paper): Uncertainty in Landings Allocation Algorithm at Stock Level is Insignificant. Chris Legault, Mike Palmer, and Susan Wigley

WP 4.7 (Supplementary Paper): Analysis of tagging data for evidence of decreased fishing mortality for large Gulf of Maine Cod. Miller and Hart

WP 4.A Georges Bank Cod   O'Brien
WP 4.B Georges Bank Haddock   Brooks
WP 4.C Georges Bank yellowtail flounder. Legault
WP 4.D Southern New England-Mid Atlantic yellowtail flounder. Legault and Cadrin
WP 4.E   Cape Cod-Gulf of Maine yellowtail flounder. Legault, Cadrin, Jeremy King, and Sally Sherman.
WP 4.F Gulf of Maine Cod.   Mayo
WP 4.G Witch Flounder. Wigley
WP 4.H Gulf of Maine/Georges Bank American Plaice. O'Brien
WP 4.I Gulf of Maine Winter Flounder. Nitschke
WP 4.J Southern New England Winter flounder. Terceiro
WP 4.K Georges Bank Winter Flounder. Hendrickson
WP 4.L   White Hake. Sosebee
WP 4.M Georges Bank/Gulf of Maine Pollock. Mayo
WP 4.N Gulf of Maine/ Georges Bank Acadian Redfish. Miller
WP 4.O Ocean Pout . Wigley
WP 4.P Gulf of Maine/Georges Bank Windowpane Flounder. Hendrickson
WP 4.Q Southern New England – Mid-Atlantic Windowpane Flounder . Hendrickson
WP 4.R Gulf of Maine Haddock. Palmer
WP 4.S Atlantic Halibut. Col

WP 5.1 (Supplementary Paper): Overview of age-based projection model (AgePro) for reference point estimation and scenario analyses.

Terms of Reference for the GARM-III "Biological Reference Point (BRP)" Meeting

1. For relevant stocks, determine the influence of retrospective patterns in parameter estimates (e.g., fishing mortality, biomass, and/or recruitment) from assessment models on the computation of BRPs and on specification of initial conditions for forecasting.

2. Trends in Stock Productivity:

   a.) For relevant stocks, identify trends in biological parameters (i.e., life history and/or recruitment) and assess their importance for the computation of BRPs and for specification of rebuilding scenarios;

   b.) If possible, summarize trends in pertinent environmental variables that might be related to the trends in those biological parameters relevant to BRPs.

3. Ecosystem approaches to Gulf of Maine/Georges Bank fisheries:

   a.) Determine the production potential of the fishery based on food chain processes and estimate the aggregate yield from the ecosystem;

   b.) Comment on aggregate single stock yield projections in relation to overall ecosystem production, identifying potential inconsistencies between the two approaches.

4. Biological Reference Points (B_{target}, $B_{threshold}$, F_{target}, $F_{threshold}$):

   a.) For each stock, list what the <u>current</u> BRPs and/or BRP Proxies are (e.g., B_{MSY}, B_{MAX}, F_{MSY}, $F_{40\%MSP}$, historical survey catch per tow, etc.), and give their values (i.e., typically from GARM II);

   b.) For each stock, update or redefine BRPs or BRP proxies that will be used for stock status determination, and compute their expected values and precision. Note: These BRPs and their proxies must be comparable and consistent with outputs from the recommended assessment models from the GARM III "Modeling" Meeting.

5. For each stock, identify appropriate models for forecasting and for evaluating rebuilding scenarios.